

CLAIMS

1. An ankle-foot orthosis for resisting plantarflexion of a patient's foot, the orthosis comprising: an elastic structure formed of contiguous first and second tubular members, said second tubular member being set at an angle to the first tubular member to define, at least in use, a generally L-shaped cavity configured to accept and fit closely about the foot and ankle of the patient; and a rib which is permanently bonded or otherwise permanently affixed to a region of the structure which overlies the dorsum of the patient's foot in use, said rib being formed of a resiliently flexible material that has a resilience appropriate for resisting the particular degree of plantarflexion experienced by the patient.
2. An orthosis according to Claim 1, wherein said elastic structure is operable to exert a compressive force on said foot and ankle of said patient.
3. An orthosis according to Claim 2, wherein said elastic structure comprises a compression stocking.
4. An orthosis according to any of Claims 1 to 3, wherein said elastic structure is woven to provide an elastic stretch in only one direction, namely a direction which increases the cross-sectional area of said generally L-shaped cavity.
5. An orthosis according to any of Claims 2 to 4, wherein said compressive force is more or less than at least 5 mm Hg (approximately 670 Pascals).
6. An orthosis according to any of Claims 2 to 5, wherein different regions of the elastic structure exert different compressive forces on the foot and ankle of the patient.

7. An orthosis according to Claim 6, wherein said second tubular member (or at least a portion of said second tubular member) exerts a greater compressive force on the foot than the compressive force exerted on the ankle by the first tubular member.

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8. An orthosis according to any preceding claim, wherein the rib is of silicone elastomer.

10 9. An orthosis according to Claim 8, wherein the resilience of the rib, as between a first orthosis and a second orthosis, may be varied by varying the thickness of the rib of one orthosis as compared to the other.

15 10. An orthosis according to Claim 8 or 9, wherein the resilience of the rib, as between a first orthosis and a second orthosis, may be varied by varying the composition of the rib of one orthosis as compared to the other.

11. An orthosis according to any of Claims 8 to 10, wherein the rib is of 35 to 80 shore silicone elastomer, preferably 65 shore silicone elastomer.

20 12. An orthosis according to any preceding claim, wherein said rib comprises a pair of proximal wings extending from the rib towards the back of the ankle of the patient.

25 13. An orthosis according to Claim 12; wherein said proximal wings extend in parallel to a proximal edge of the elastic structure.

14. An orthosis according to Claim 12 or 13, wherein said proximal wings have the same resilience or a different resilience to that of the rib.

30 15. An orthosis according to any preceding claim, wherein said rib comprises a pair of distal wings extending from the rib, in the region of the

metatarsal heads, towards the plantar aspect of the foot.

16. An orthosis according to Claim 15, wherein said distal wings extend generally in parallel to a distal edge of the elastic structure.

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17. An orthosis according to Claim 15 or 16, wherein said distal wings have the same resilience or a different resilience to that of the rib.

18. A method of manufacturing an orthosis for resisting plantarflexion of patient's foot, the method comprising the steps of: providing an elastic structure formed of contiguous first and second tubular members set at an angle to one another to define, at least in use, a generally L-shaped cavity configured to accept and fit closely about the foot and ankle of a patient; mounting the structure on a foot-shaped anvil; preparing a silicone elastomer having a resilience which is appropriate for resisting the particular degree of plantarflexion experienced by the patient; applying the silicone elastomer to the elastic structure to form a rib that will in use overlie the dorsum of the patient's foot; allowing the silicone elastomer to cure; and removing the elastic structure from the anvil.

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